IHSA - 82008

10 February 1982

MEMORANDUM FOR: · Bruce T. Johnson
Director, Office of Data Processing

Director, Office of Information Services   STAT

FROM: STAT
Information Handling Systems Architect

SUBJECT: NARS/GSA Approach to Justification of Office
Automation Investments

REFERENCE: "Office Automation in the Federal Government:
Status Report," NARS, GSA, May 1981

1. The referent report addresses a serious and valid concern relative to
the very large investments that are about to be made throughout the Government
in office automation systems. It calls for the preparation of a Federal
Property Management Regulation (FPMR) requiring cost effectiveness justification
of all new U.S. Government office automation systems. Improved productivity for
the investment is to be the criteria. Although well intentioned, I do not
believe the matter has been adequately and knowledgeably addressed in this
report. If implemented as addressed, I believe it would not serve the intended
purpose and would cause major turmoil in the government.

2. It does not appear that we can afford to sidestep the issue on the basis
of a successful appeal for a GSA exemption for CIA systems in the FY 1983
Appropriation. The referent report also recommends that "NARS/GSA initiate
discussion with OMB relating to initiating an EOP sponsored, Government-wide
program for promoting the systematic development and use of workload
productivity measurement systems in all Federal offices." If it is implemented
as recommended, I would expect OMB to enforce it on us if GSA could not.

3. The principal concern with the approach advocated by this study is the
general naivete it reflects with respect to the applicable cost effectiveness
analyses. We only know how to do cost effectiveness justification for a limited
subset of office automation functions. Those are ones relevant to the
automation of manual tasks, or the more efficient automation of already
automated tasks. Chief among these is stand-alone word processing. All the

rest relate to automation of the functions of the knowledge worker. In fact, as soon as a word processing terminal is linked to a central ADP system, I would aver that you are now involved, to some degree, in knowledge worker functions. Since all of our terminals will eventually be linked to central systems, the referent justification requirement would deeply immerse us in the assessment of knowledge worker productivity.

4. The principal barrier to such justification is that there does not exist any commonly accepted, universal techniques for assessing the productivity of knowledge workers. The root problem is the definition of a measure for the productivity of knowledge workers. The most logical and conceptually valid measures which have been proposed relate to information theory and entropic concepts. The fact that their interpretation requires a very high level of technical sophistication on the part of the reviewer virtually precludes their utility for the purposes defined in the referent document.

5. "Hokey" cost effectiveness analysis for knowledge worker automation support have been generated, in both private industry and the government, where such were required in order to obtain program approval. We obviously could generate such as well if it were required. I do not believe that the cynicism that such an approach generates is healthy, however.

6. If you share these concerns, I believe we should make them known to the NARS as soon as possible. The further their recommendation goes, the harder it will be to modify satisfactorily. Perhaps we could offer to help by reviewing criteria. For example, I should think any directive specifying cost effectiveness criterion for office automation should include:

   o a definition of office automation, for the intended
     assessment purposes

   o a definition of productivity measures to be applied

   o accounting standards to be applied in the development
     of costs

None of these appear in the referent report. Lacking such criteria, it seems to me that the NARS is in the position of requiring the whole federal government to do what nobody knows how to do yet. That is R&D on a fairly grand scale. (In fact, the study implies the R&D character of the requested assessments via its recommendations that there be funded an R&D program in OA as well as a testing facility to evaluate the productivity contributions of various approaches.) Because of the obvious complexity in defining the foregoing three criteria, I believe that validity of the general recommendation rests upon their satisfactory articulation.

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OFFICE AUTOMATION IN THE FEDERAL GOVERNMENT

A STATUS REPORT

MAY 1981

GSA General Services Administration National Archives and Records Service Office of Records and Information Management